REMARKS

Claims 77-98 are now pending in the application. New claims 82-98 have been added to provide protection for the invention commensurate in scope with the disclosure and the lack of teaching of such features in the prior art. No new matter has been entered. Claim 81 has been objected to as depending from a rejected base claim, but has been indicated as being directed to allowable subject matter. Claims 77 and 79 stand rejected under 35 U.S.C. § 102 as being anticipated by Munk, U.S. Patent No. 4,667,465 (<u>see</u> First Office action dated February 7, 2003); claims 77 and 79 further stand rejected as being anticipated by Foster-Pegg Article (<u>see</u> Second Office action dated June 9, 2003 at p. 7); and claims 77-80 stand rejected as being anticipated by Bronicki et al., UK 2280224, (<u>see</u> Second Office action dated June 9, 2003 at p. 7). These grounds of rejection are respectfully traversed.

<u>**Rejection over Munk**</u>

The maintained rejection of claims 77 and 79 as being anticipated by Munk is respectfully traversed. As explained, Munk fails to disclose all the limitations of independent claim 77.

Among other things, Munk fails to teach or suggest the supercharging subsystem of independent claim 77. The supercharging subsystem as set forth in claim 77 comprises at least one supercharging fan *which increases the pressure of the gas turbine subsystem input airstream*, whereby power output of the turbine and hence electrical output of the electrical generator may be increased (emphasis added). In other words, the capacity of gas turbine power plants at high ambient temperatures is improved by reducing air temperature downstream of the supercharging fan and providing an inlet pressure to the gas turbine that is substantially above atmospheric pressure. The Patent Office analogizes the blower 160 of Munk to Applicant's supercharging subsystem. However, the blower 160, as described in column 3, lines 64-67, merely provides a forced draft of air through a chamber which includes a fogging subsystem 200, an input duct 115, and an input opening of a compressor 110. There is no

teaching or suggestion in Munk that a positive air pressure is supplied to the turbine subsystem. In fact, Munk is not concerned with improving turbine capacity, and therefore, there is no reason that increased air pressure be supplied to the turbine system. Munk's primary concern is reducing oxides of nitrogen (NOx) or NOx emissions. See column 2, lines 64-68. Since Munk fails to teach Applicant's "supercharging subsystem," Munk cannot anticipate claim 77. Thus, the rejection of claim 77 should be withdrawn.

In particular, at Col. 3, ll. 1-3, Munk states: "Excess air is diminished as fog vapor displaces excess air at input to the combustion chamber. Less excess air results in less NOx formation".

Clearly, from this statement and from the stated purpose of Munk's invention (emissions reduction and not power augmentation), the forced draft of air is used merely to convey the fog vapor into the engine, and <u>not</u> to increase mass flow (<u>i.e.,</u> to add to excess air), which is the opposite of the effect of the present claimed invention.

In support of the above arguments, Mr. Kopko explains in his Declaration that the purpose of Munk's blower 160 is to overcome extra pressure drops from the heater 190 and the fogging subsystem 200. The blower 160 is not analogous to a supercharging fan which supplies an air pressure to a turbine that is substantially above atmospheric pressure. Thus, blower 160 does not increase the pressure of the gas turbine subsystem input airstream whereby power output of the turbine and hence electrical output of the electrical generator may be increased, as set forth in claim 77. For at least this reason, Munk cannot anticipate or suggest the invention of claim 77.

Further, Munk fails to disclose a fogger to humidify and cool the input airstream as claimed. As previously explained, substantial heat must be added by the heaters of Munk to ensure complete evaporation, which would almost certainly result in a net <u>increase</u> in air temperature between the blower and the turbine while claim 77 requires a <u>cooling</u> of the input air stream.

Examiner's Treatment of Kopko Declaration

The Examiner improperly has failed to accept the Declaration of the inventor filed pursuant to Rule 132, on the basis that the inventor "clearly . . . has an interest in this application." The declaration of an applicant, while less persuasive than that of a disinterested person, cannot be disregarded for this reason alone. Ex parte Keyes, 214 USPQ 579 (Bd. App. 1982); In re McKenna, 97 USPQ 348 (CCPA 1953).

Inventor Kopko in his Declaration has provided a reasoned explanation as to why Munk does not teach supercharging of a gas turbine subsystem. The Examiner has not properly rebutted this explanation. The sole citation provided is to Munk's description of the blower 160 as providing "a forced draft of air through a chamber which includes a fogging subsystem 200." Col. 3, ll. 64-66. The Examiner concludes that "[f]orcing air clearly requires an increase in pressure and thus the blower clearly is providing supercharging to the air being provided to the compressor."

Respectfully, this conclusion does not follow from the disclosure of the Munk reference considered as a whole. Specifically, Mr. Kopko in his Declaration recognizes that the blower of Munk provides some increase of air pressure, but explains that any such increase simply overcomes a corresponding pressure drop caused by the heater and fog system 200, 250. Claim 77 requires a supercharging subsystem which increases the pressure of said gas turbine subsystem input airstream, whereby power output of said turbine and hence electrical output of said generator may be increased. The Declaration establishes that the term supercharging is understood in general to mean the supply of air to a turbine that is substantially above atmospheric pressure. In order to even more starkly highlight this distinction, claim 77 has been amended to even more explicitly refer to a supercharging subsystem.

Dependent claim 79 depends from independent claim 77, and is submitted to be patentable over the Munk reference for at least the same reasons set forth above in connection with claim 77.

Rejection over Foster-Pegg

The maintained rejection of claims 77 and 79 as being antic pated by Foster-Pegg also is respectfully traversed. As previously explained, the Fos er-Pegg article is already described in the specification. Foster-Pegg fails to disc ose or suggest a gas turbine system having a supercharging subsystem and at least one fogger located upstream of a gas turbine subsystem input airstream, wherein t e gas turbine system is operated to provide maximum generator design rated output at summer-peaking temperatures as set forth in sole independent claim 77.

Foster Pegg is concerned with deep chilling or evaporative cooling (use of media to cool air by dripping water on 'cardboard' and allowing it to evap rate). Nowhere does Foster-Pegg disclose fogging (as it had not been applied to turt ines in those days). The fact that Foster-Pegg increases output with a combination of supercharging and deep chilling or evaporative cooling does not indicate that Foster-Peg considered fogging, and in fact the absence of any mention of fogging in the Foster Pegg reference supports the contention that Foster-Pegg did not teach fogging in this art.

As shown in Fig. 1, gas turbines and associated generators are rated based on turbine capacity at 40 to 50 degrees F inlet air temperature, such that the generators are designed (i.e., sized) to have maximum output at 59 degrees F. As ambient temperature rises to summer-peaking conditions, the output of the system decreases. According to the present invention, a combination of a supercharging subsystem and a fogger are provided to a gas turbine system to enable the system to achieve maximum power output at summer-peaking conditions, see Fig. 6 and pp. 14-15 of the specification.

Foster-Pegg fails to teach such operation. Foster-Pegg may disclose the use of inlet air cooling to increase power output, but the increased power output would simply raise the curve shown in Fig. 1, and not change the shape of the curve, as shown in Fig. 6 for example, according to the present invention. As a result, Foster-Pegg is not able to increase the power output from a gas turbine system at high ambient temperatures other than by simply increasing the size of the components of the system.

Rejection over Bronicki et al.

The maintained rejection of claims 77-80 as being anticipated by Bronicki et al. also is respectfully traversed. Bronicki et al. discloses in Fig. 8 a gas turbine power plant including a direct contact heat exchanger 222, a precompressor device 223, and an evaporative cooler 224 upstream of a gas turbine unit 220. Bronicki explains that the heat exchanger 222 produces cooled ambient air, the precompressor device 223 compresses the cooled ambient air to produce pressurized air that is warmer than the ambient air, and the evaporative cooler 224 cools the pressurized air to produce cooled ambient air at ambient temperature and relative humidity. In contrast, claim 77 sets forth that the fogger humidifies and cools the input airstream before it is provided to the compressor. As such, Bronicki fails to anticipate the invention of claim 77.

The Bronicki reference must be interpreted in light of the Foster-Pegg disclosure as evidence the conventional school of thought in the art, in which deep chilling was used before or after a supercharging fan to lower temperatures and increase mass flow. Bronicki advanced the state of the art by focusing on using more moderate chilling or by

using spraying, in which water is dropped through the air strear ı and recovered below Deep chilling, moderate chilling, spraying, evaporative coolers, ɛnd fogging are five different mechanisms for accomplishing lower temperatures an ↿ increasing mass flow.

For example, the basic idea behind evaporative cooler techı ɔlogy is the increase of the combustion air density by reduction of the combustion air te mperature through adiabatic cooling. As a way of getting more power from a gas t ırbine power plant, it was known to cool down the combustion air, as cooling the air ıı akes it denser, increasing the mass flow of oxygen for combustion.

Bronicki refers to spray operations that drop water into the ɛi· stream and thereby cool it. No mention of small particle size or entraining the mist c r fog into the air is found in the reference. The concept of capturing the water and recyc iıg it that is taught in the reference indicates that Bronicki essentially teaches against foǵ ging.

Fogging, conversely, uses high pressure to create a fine mi:: in which water vapor in entrained in the air stream and does not form pools of water. B rɔnicki's use of the term cooler has no context beyond the specific techniques that are n: ated in the disclosure, since in its broadest use, would include deep chilling that Foste·-Pegg previously described in prior art.

Conclusion

In view of the foregoing amendment and remarks, further ar d favorable reconsideration of this application, withdrawal of all outstanding grounds of rejection, and the issuance of a Notice of Allowance are earnestly solicite: .

RESPECTFULLY SUBMITTED,					
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